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(54) Demountable scaffold platform assembly

(57) A demountable platform assembly for enabling a user platform unit to be so mountable with respect to a building, wall or the like that the user platform can be arranged to overhang the plane of the wall, and/or the lower regions of a roof of the building relative which the assembly has been positioned, the arrangement being such that a person on the platform unit can position himself as to be located above the wall, and/or said lower regions of said roof. The platform may be mounted on telescoping legs 18, and may alternatively be attached so as to project the opposite way from the building. When detached, guard rails 9, 11, 12 may be strong enough to allow the platform to be upturned and used as a workbench. The platforms may be formed so that a plurality of them can be attached together in a staggered manner up a roof.

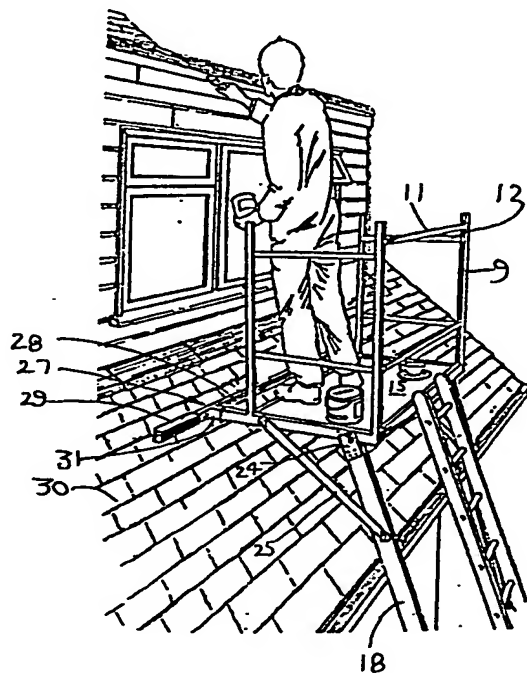


FIG 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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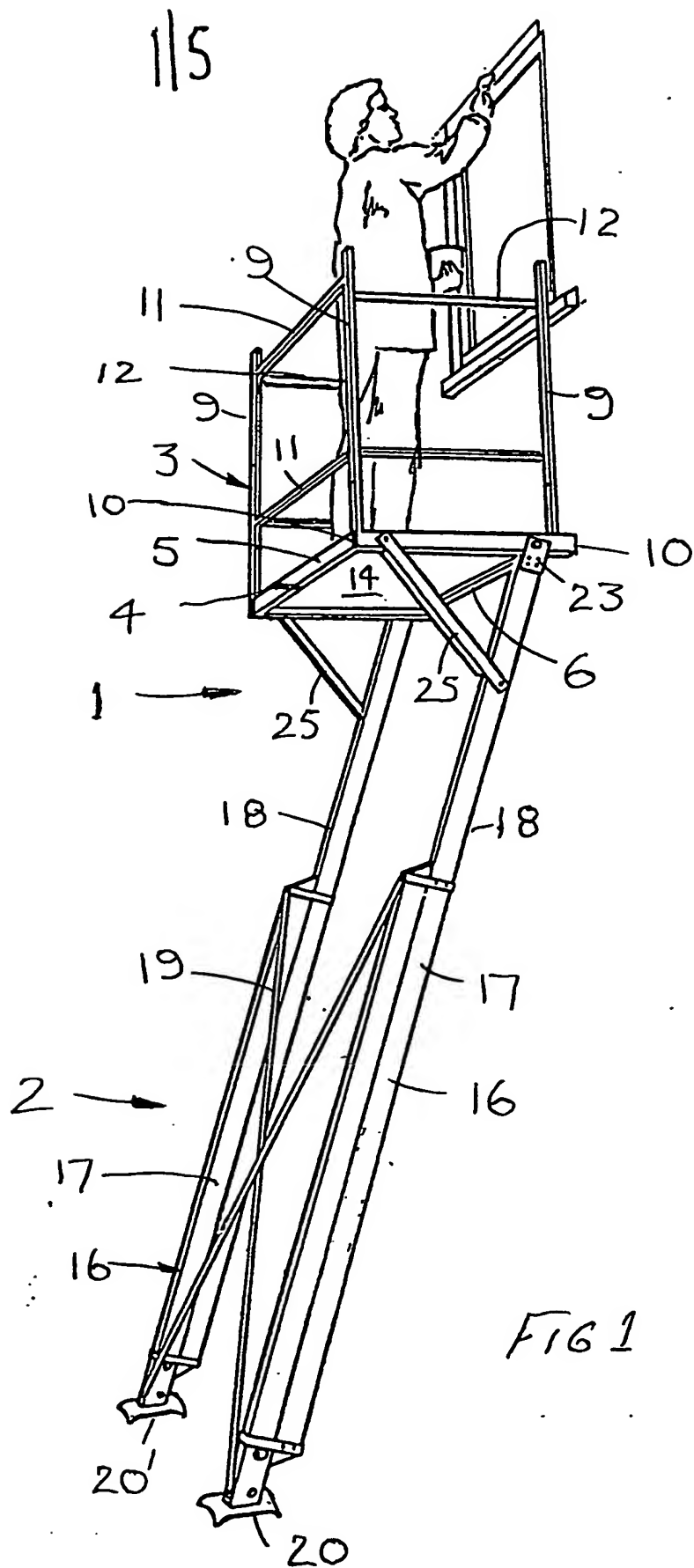


FIG 1

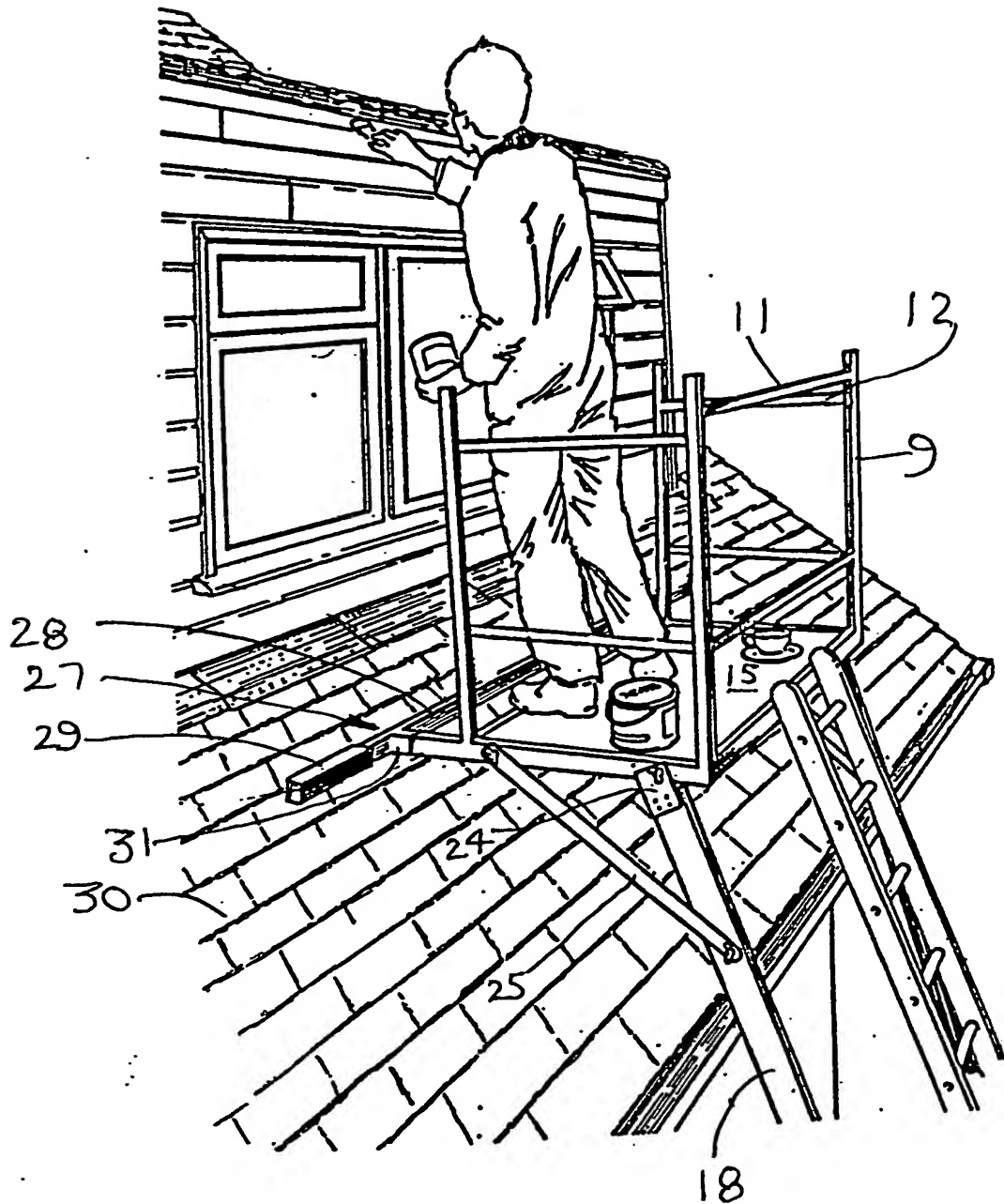


FIG 2

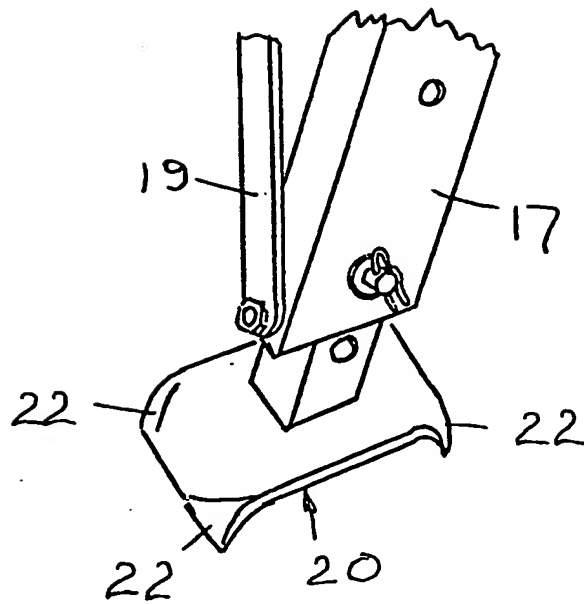


FIG 3

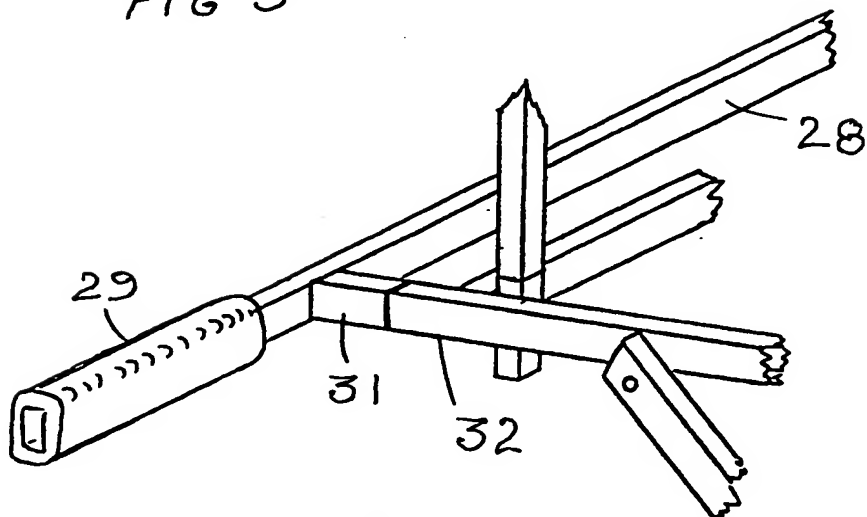


FIG 4

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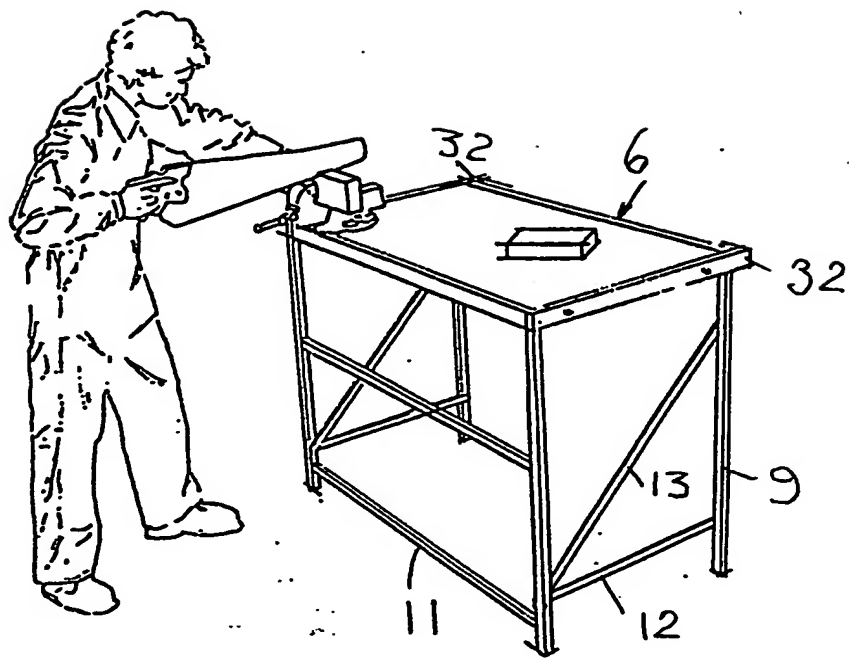
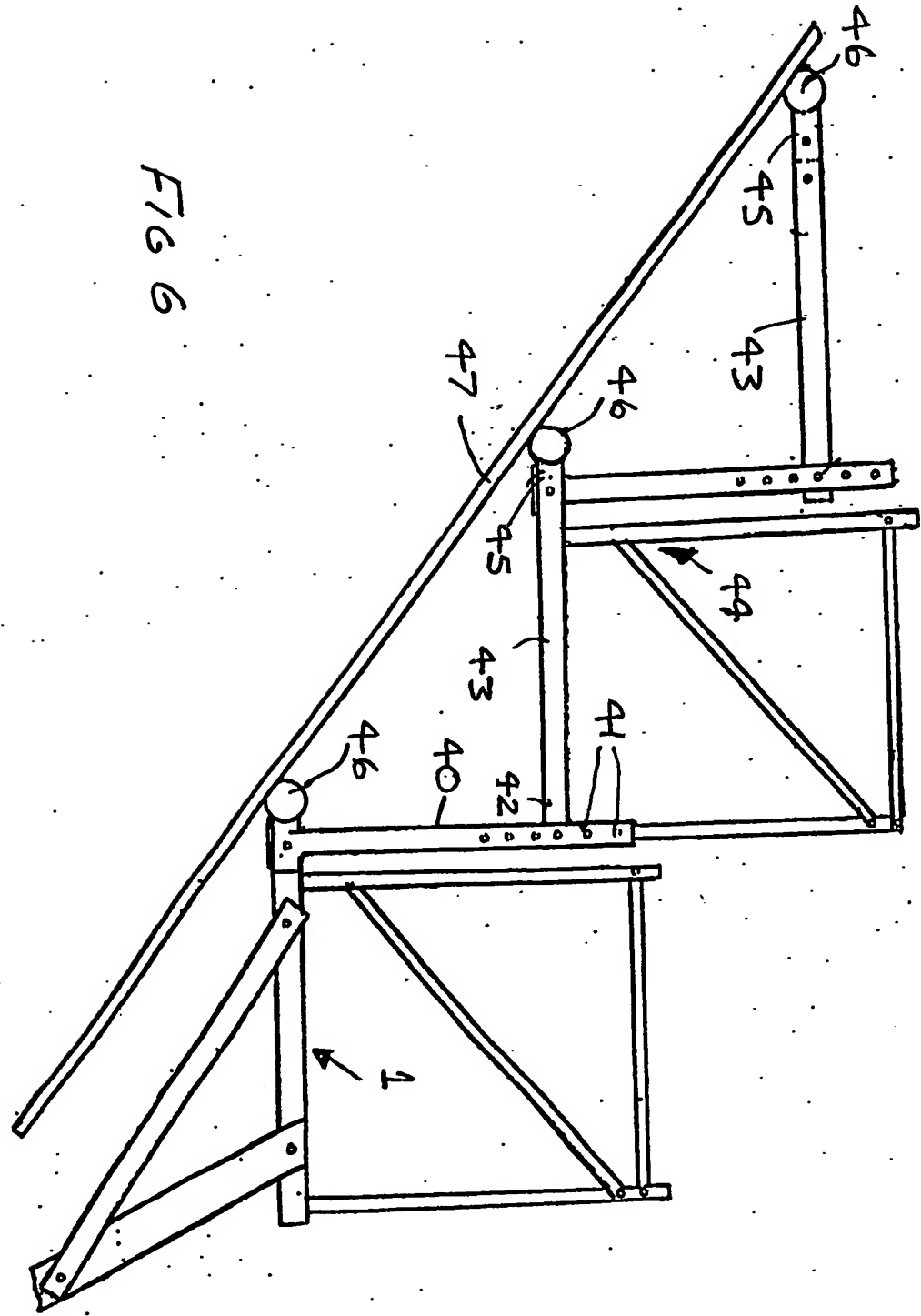


FIG 5

FIG 6



A DEMOUNTABLE PLATFORM ASSEMBLY

This invention relates to work platforms.

Work platforms are known which conventionally comprise scaffolding systems which are adapted for easy erection and dismantling and which are arranged to form a number of horizontal rectangular frameworks arranged one above the other and which can be used to support planks or sheet material which provide(s) at each or selected ones of the frameworks a horizontal platform upon which a person can stand and move about for the purposes of carrying out whatever activity is required.

It is also extremely well known to provide ladders with small platforms for the purposes of carrying tools or equipment required for use at the elevated level.

In practice, in relation to many situations in which it is desired to work at an elevated level the known ladder and tower arrangements are not particularly suitable, and often cannot enable the user to locate himself comfortably in the position he requires to be in order to carry out a required activity, i.e., painting regions of a building such as dormer windows, fascia boards etc.

This difficulty in a person being able to position himself for working in comfort frequently arises in relation to a major present day activity which is conventionally referred to as Do-It-Yourself and the proponents of Do-It-Yourself have a high motivation to carry out any repair and/or maintenance operation that they consider necessary to extend their properties and/or to maintain their properties in as good a condition as possible.

A major part of such operations involves painting windows, faschia boards etc. at elevated levels. Whilst with a large number buildings the upper level windows can be easily reached by a ladder, the width of the window or the height of the window usually involves moving and resetting a ladder several times; and/or re-adjusting the position of the ladder in terms of slope so as to facilitate the reaching of portions of, for example, a window which is either totally awkwardly placed or includes some regions awkwardly placed in relation to the most convenient ladder setting.

This situation occurs very frequently in relation to building constructions where a part(s) thereof is/are set back from the plane of the walls of the lower part of the building. A common example is the so-called dormer type window which effectively projects out from a sloping roof area so that the framing thereof is set back from the plane of the wall of the building to such extent that it is often extremely difficult for a person using a ladder to approach sufficiently close to the whole of the window to enable the window to be cleaned, maintained i.e., rubbed-down and painted satisfactorily without the work person taking unnecessary risks in trying to reach the more accessible parts.

This particular problem is not overcome by the tower type of scaffolding structures since by the very nature of the their construction they cannot approach any closer to a region to be worked upon than the face-to-face contact with the adjacent wall lower parts.

It is also convenient to note that in the use of ladders it is a common practice for an operator to try to adjust the siting of the ladder to achieve a desired setting and in so

doing brings the ladder into close proximity to guttering or the like. Whilst when the ladder is not supporting anyone there may well be adequate clearances between the ladder and the guttering etc., the position can be changed
5 as a result of the inevitable ladder sagging under the weight of a person mounting the ladder.

Since it is difficult to judge the likely extent of such sagging, there is always the risk that the guttering or the like could be damaged before the user has appreciated that
10 the ladder has sagged sufficiently to cause such damage.

It is an object of the present invention to provide an elevated platform structure which at least reduces the problems mentioned above.

According to a first aspect of the invention there is
15 provided a demountable platform assembly including a platform unit, and a support structure adapted for so mounting the platform unit with respect to a building, wall or the like, that a person on the platform may locate himself forwardly of the support structure in the direction
20 towards said building, wall or the like.

A second aspect of the invention provides a demountable platform assembly for enabling a user platform unit to be so mountable with respect to a building, wall or the like that the user platform can be arranged to overhang the
25 plane of the wall, and/or the lower regions of a roof of the building relative which the assembly has been positioned, the arrangement being such that a person on the platform can position himself as to be located above the wall, and/or said lower regions of said roof.

30 Conveniently, the platform unit includes means for engaging with and bearing against a lower region of the said roof,

the arrangement being such that the roof engaging means serves to spread the load of any person(s) on the platform unit, the platform unit and its associated support structure acting upon the roof.

- 5 Preferably, the support structure comprises lengthwise extendable legs whose upper ends connect with the platform unit and whose lower ends are adapted for engagement with the ground, floor or other non-upright surface adjacent to the building, wall or the like.

- 10 Conveniently, in a preferred construction the platform unit is convertible into a table, work bench or the like.

- In a preferred arrangement the safely rail arrangement provided for the protection of a user when on the elevated platform unit is arranged to be at least in part utilisable
15 as leg formation for the unit when used as the table, workbench or the like.

- Broadly, according to a further aspect of the present invention there is provided a demountable platform structure which enables a user work platform to be so
20 mounted as to allow a person to position himself closer to a building or the like than the plane of a wall or the like of the building adjacent the base regions of the structure whilst allowing the person to be able move around on the platform structure.

- 25 For a better understanding of the invention and to show how to carry the same into effect reference will now be made to the accompanying drawings in which:-

- Figure 1 is a view of apparatus incorporating the concepts of the invention when in a first operational configuration
30 as an elevated platform;

Figure 2 is a view of the apparatus of the invention when in an alternative operational configuration as an elevated platform, the Figure 2 being a fragmentary view to an enlarged scale;

5 Figure 3 is a view to an enlarged scale of a detail of the apparatus of Figures 1 and 2;

Figure 4 is an enlarged view of a detail of the operational configuration of Figure 2;

10 Figure 5 schematically illustrates a further operational configuration or application of a major portion of the apparatus of Figures 1 and 2, and

Figure 6 schematically illustrates the incorporation of additional platform units for use when working upon a roof.

15 Referring now to the drawings an elevated work platform structure 1 includes a supporting leg section 2 and the actual work platform unit 3 upon which a user is free to stand and to move about.

20 The work platform unit 3 comprises a rectangular frame 4 comprising side rails 5 and 6 and end rails 7 and 8. These rails are firmly joined by nuts and bolts, welding or the like. A post 9 projects outwardly from each corner region 10 of the frame 4. The posts are intended to be parallel to each other and are arranged perpendicular to the plane of the frame 4. The posts are braced by
25 stretchers 11 and 12 and are additionally stiffened by diagonal stretchers 13. The arrangement is such as not only to stiffen the actual structure of the posts but also to provide a guide or safety rail system as may be seen from Figures 1 and 2. The frame 4 is bridged by a series

of planks or other sheet material 14 which provides an extended area support/work surface 15. The planks or other sheet material are/is firmly mounted to the frame so as to provide a safe and secure platform when the apparatus is as shown in Figure 1 or 2.

The work platform unit 3 is adapted for being removably mountable to the upper ends of the support leg section 2 which latter comprises two similarly constructed leg members 16. Each member 16 comprises two portions 17 and 18 which are coupled together so as to enable an overall adjustment of the length of the leg supports.

The legs are cross braced by cross members 19 intercoupling the upper and lower ends of the leg portions 17.

The lowermost ends of the portions 17 are provided with self levelling feet 20 which comprise plates 21 whose corners 22 are turned downwards to provide spike like members which are able to prevent slippage of the legs when in their elevated positions as shown in the Figure 1.

Figure 3 illustrates to an enlarged scale the self levelling feet 20.

The upper ends of the portions 18 are secured to the end rails 7 and 8 of the frame 4. For this purpose the upper ends of the leg sections can be provided with brackets 23 which are securable by bolts 24 to the end rails 7 and 8.

The frame is maintained by bracing bars 25 at such angle to the support legs section 2 as to produce a horizontal surface when the legs are inclined to the vertical as shown.

The frame 4 is adapted to mount means (not shown in Figure

1) for spreading the load exerted against any surface against which the apparatus of the invention bears when in use. These load spreading means will be discussed in detail hereinafter.

5 As will be seen from Figure 1 by resting the upper part of the apparatus against a wall or the like (not shown in Figure) adjacent to a window or other region upon which it is required to perform some operation, for example painting, the person standing on the platform will have
10 considerable freedom of movement with respect to the region to be painted. As the structure bears in a ladder like fashion against a wall or the like the facing region of the platform will be as close as possible to the wall. Since the user is able to move about he is able to approach
15 with greater facility the regions at which he wishes to work i.e., paint.

It will be understood that safety chains or the like 26 are provided to ensure that any person on the platform will be adequately protected against accidentally stepping off the
20 platform. In addition, further safety chains or the like can be provided where convenient for securing the apparatus of the invention against inadvertent displacement with respect to a building against which it has been erected.

It will be appreciated that since the load of the apparatus
25 is spread, as will be discussed hereinafter, across a wide area of the wall, roof or the like the arrangement provides for enhanced stability as compared with the width afforded by a conventional ladder.

In an alternative arrangement not indicated in the Figures
30 the upper ends of the leg portions 18 are provided with wheels (not shown) which facilitate the handling of the support structure 2 during the erection of the assembly

against a wall etc. During this operation the wheels can roll on the wall thereby avoiding the upper ends of the portions 18 from digging-into the wall surface during the upper movement thereof.

- 5 The wheels can additionally serve in the general handling of the assembly.

The mode of mounting the platform unit 2 to the leg section 3 shown in Figure 1 is regarded as the outboard or external mounting for the platform unit since as is clearly shown in
10 the drawing the platform unit 3 overhangs the actual leg section 2 and effectively extends away from any surface against which the platform/leg sections rest.

Referring now to Figure 2, this Figure illustrates a preferred operational mode for mounting the platform unit
15 for use. The mode shown is conveniently called the inboard or internal mode of use. As will be seen from Figure 2, the platform projects in the opposite manner to that shown in Figure 1 so that the major part of the platform is positioned in advance of the support section.

20 This mode of use is particularly intended whenever it is desired to paint windows or the like which are set back from the plane of the adjacent walls of a building. A particular example of such windows is the dormer type window as is schematically shown in the Figure 2

25 The Figure 2 illustrates an embodiment of a load spreader means 27 provided for the distribution of the loads exerted by the apparatus of the invention when in use. In the embodiment shown the load spreader means 27 comprises a main bar 28 having a length greater than the overall length
30 of the rails 5 and 6 of the main frame 4 and is provided at each end with a relatively soft material 'lagging' 29

which prevents direct contact between the bar 28 and adjacent roof tiles 30. The bar 28 is provided with stub arms 31 which are adapted telescopically to engage in sockets 32 provided at corresponding ends of the end rails 7 and 8. In an alternative arrangement the end rails do not project outwardly of the frame 4 but are suitably open ended to receive the stub arms.

Figure 4 illustrates the connection of the load spreading means in detail and to a larger scale.

It will be observed that the inboard mode of mounting produces a positioning of the platform which is such that it effectively overhangs the adjacent roof area inboard of the main wall of the building so that the work person is able to approach with ease close to the region to be worked upon i.e., painted as compared with the situation prevailing with a ladder of conventional scaffolding tower.

Referring now to Figure 5 this shows the load support platform used as a work table. This use is made possible by the structure of the posts 9 relative to the frame 4.

As will be clear the posts 9 become the table legs. In view of the form of bracing provided for the posts (legs) the platform when used as a table is strong enough to carry tools such as a vice and with stand racking as may arise when sawing material.

Whilst the above description has indicated the use of a single platform mounted at the uppermost parts of the support structure it will be appreciated that arrangements can be made for enabling the support unit to be mounted at various locations lengthwise of the structure.

As a further modification the width of the support unit base can be increased i.e., to form a double width unit.

If thought necessary the supporting leg section in the case of the wider units can incorporate additional leg members 16. It will be understood that the number of leg members utilised will be closely related to the overall weight required to be supported and the safety aspects of the use of the platform structure.

Referring now to Figure 6. This illustrates a modification of the system in which additional platform units can be coupled one to the other in a generally step formation thereby enabling a user to move further upwards of a roof formation. As will be seen from the Figure the rear part of a further unit engages with the forward end of the immediately adjacent already provided unit.

As shown in the Figure the platform unit 1 connecting to the support structure 2 is provided with uprights 40 located one at each corner of the forward part of the unit.

Each upright 40 is adapted to provide a series of mounting locations 41 for the rear end 42 of the base frame 43 of a further platform unit 44 whose forward end 45 is provided with, for example, load spreading means 46 which is intended to rest upon a roof 47.

The provision of a series of mounting locations enables adjustment of the connection level of the unit rear end 42 to an upright 40 to accommodate various roof inclinations i.e., pitch and also situations in which the pitch of a roof may change from eaves level to ridge level.

As indicated in the Figure 6 a series of the additional platform units may be inter-coupled as shown. It will be noted that with the arrangement shown the overall weight of the platform units is downwardly directed so that in use

the weight of the series of units tends to hold them against the roof.

It will be appreciated that safety rails etc., will be provided. In the Figure these are indicated at 48.

CLAIMS

1 A demountable platform assembly including a platform
unit, and a support structure adapted for so mounting the
platform unit with respect to a building, wall or the
5 like, that a person on the platform may locate himself
forwardly of the support structure in the direction towards
said building, wall or the like.

2. A demountable platform assembly for enabling a user
platform unit to be so mountable with respect to a
10 building, wall or the like that the user platform can be
arranged to overhang the plane of the wall, and/or the
lower regions of a roof of the building relative which the
assembly has been positioned, the arrangement being such
that a person on the platform can position himself as to be
15 located above the wall, and/or said lower regions of said
roof.

3. A demountable platform assembly as claimed in claim 1
or 2, and wherein the platform unit includes means for
engaging with and bearing against a lower region of the
20 said roof, the arrangement being such that the roof
engaging means serves to spread the load of person(s) on
the platform unit, the platform unit and its associated
support structure acting upon the roof.

4. A demountable platform assembly as claimed in claim 1,2
or 3, and wherein the support structure comprises a pair of
lengthwise extendable legs whose upper ends connect with
the platform unit and whose lower ends are adapted for
5 engagement with the ground, floor or other non-upright
surface adjacent to the building, wall or the like.

5. A demountable platform assembly as claimed in claim 5,
and wherein the legs are of a telescopic construction.

6. A demountable elevatable platform assembly as claimed
10 in any preceding claim, and wherein the connection
arrangements between the platform unit and the support
structure therefor enables the platform unit also to be
mounted to the structure so that it extends away from the
building, wall or other structure with which it has ben
15 engaged.

7. A demountable platform assembly as claimed in any one
of the preceding claims, wherein the platform unit is
convertible into a table, work bench or the like.

8. A demountable platform assembly as claimed in claim 7,
20 wherein a safely rail arrangement provided for the
protection of a user when on the elevated platform unit is
arranged to be at least in part utilisable as leg formation
for the unit when used as the table, workbench or the like.

9. A demountable platform assembly as claimed in any
25 preceding claim, and wherein the support structure is
adapted for mounting more than one platform unit.

10. A demountable platform assembly, and wherein the platform units are adpted for coupling together to provide a stepwise formation for use with an inclide surface such as a building roof or the like.
- 5 11. A demountable platform assembly, as claimed in any preceding claim, and wherein in order to provide adequate support for a wide platform unit additional support arrangement(s) is/are provided for supporting the wider platform unit.
- 10 12. A demountable platform assembly, constructed and arranged to operate substantially as hereinbefore described with reference to the accompanying drawings.

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